

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION IX

In the Matter of :

BROWN & BRYANT, INC.
600 South Derby Road
Arvin, California

The Southern Pacific Transportation
Company and the Atchison, Topeka &
Santa Fe Railway,

Respondents

Proceeding under Section 106 of the
Comprehensive Environmental Response,
Compensation and Liability Act of 1980,
as amended by the Superfund Amendments
and Reauthorization Act of 1986
(42 U.S.C. Section 9606)

Order No. 91- 6

I. JURISDICTION

This Order is issued to the Southern Pacific Transportation Company and the Atchison, Topeka & Santa Fe Railway ("Respondents") pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 ("CERCLA"), 42 U.S.C. Section 9601, et seq., by authority delegated to the Administrator of the United States Environmental Protection Agency ("EPA"), and redelegated to the EPA Regions.

The Director of the Hazardous Waste Management Division, EPA Region IX, has determined that there may be an imminent and substantial endangerment to the public health or welfare or the environment because of the release or threatened release of hazardous substances from the Brown & Bryant, Inc. Superfund Site in the City of Arvin, Kern County, California (hereafter "the Site" or "the facility").

The EPA has designated an On-Scene Coordinator ("OSC") for the Site, pursuant to 40 C.F.R. Part 300.120, published at 55 Fed. Reg. 8827-8828 (March 8, 1990).

II. FINDINGS OF FACT

A. BACKGROUND

1. Site Location

Until recently, Brown & Bryant, Inc. ("B&B") operated a pesticide reformulation and custom applicator plant in Arvin, California, southeast of Bakersfield. The property which the B&B plant is located on, and an adjoining parcel owned by Respondents Southern Pacific Transportation Company ("Southern Pacific") and the Atchison, Topeka & Santa Fe Railway ("Santa Fe") together constitute the Brown & Bryant, Inc. Superfund Site. The Brown & Bryant Site is located on approximately 5 acres of land at 600 South Derby Road in the City of Arvin, Kern County, California. The land adjacent to the Site is agricultural, light industrial and residential in nature. Arvin is an agricultural community of

1 approximately 8,000 people. The B&B Site is located within one-
2 half mile from the Sierra Vista School, the Haven Drive School
3 and Di Giorgio County Park.

4 2. Site History

5 The B&B plant was used to formulate agricultural chemicals,
6 including pesticides, herbicides, fumigants and fertilizers, from
7 1960 to 1989. Prior to the construction of the reformulation
8 plant, the Site was used as farmland.

9 In July 1980, B&B (in an effort to comply with requirements
10 set forth in the Resource Conservation and Recovery Act of 1976
11 ("RCRA"), 42 U.S.C. Section 6921, et seq.), notified EPA that it
12 generated, transported, treated, stored and disposed of hazardous
13 wastes at its Arvin reformulation plant.

14 Thereafter, in May 1983, the California Department of Health
15 Services ("DHS") inspected the Arvin plant to determine if B&B
16 was in compliance with applicable hazardous waste laws. At the
17 time of the inspection, several violations involving the storage,
18 disposal and transportation of hazardous wastes were noted. Fol-
19 lowing the inspection, DHS directed B&B to correct the violations
20 it had found, and to conduct a site assessment to determine the
21 extent of contamination at the plant. Between 1983 and 1988, B&B
22 conducted site investigations to determine the extent of soil and
23 groundwater contamination in the vicinity of the Arvin reformula-
24 tion plant, and began some initial cleanup work at the Site, un-
25 der the supervision of DHS. In 1989, B&B ceased all ongoing
26 operations at the Arvin plant.

27

1 The B&B Site was listed on the National Priorities List
2 ("NPL") on October 4, 1989. The principal threats that form the
3 basis for the listing of the Site, and EPA involvement in the
4 remediation of the facility, are: (1) the presence of significant
5 groundwater contamination, with the potential for such contamina-
6 tion to migrate to and taint public and private drinking water
7 supplies and agricultural wells in Arvin, and (2) the potential
8 for human exposure to highly contaminated soils on-Site, through
9 inhalation, ingestion or dermal contact.

10 3. Site Ownership

11 As indicated above, the Brown & Bryant Superfund Site is
12 comprised of two parcels of land. These parcels are presently
13 owned by separate entities, and have been separately owned since
14 at least 1948. The larger parcel of land, which extends from the
15 eastern boundary of the Site and includes the area of the former
16 B&B reformulation plant, is presently owned by Brown & Bryant,
17 Inc. B&B has had a property interest in this portion of the Site
18 since December 1959, when the firm first leased the parcel in
19 question from its then-owners, Ann Derby Tipton and Eve Derby
20 Stockton, for a period of ten years. According to that lease,
21 the property (which was previously vacant) was to be used for the
22 business of manufacturing and distributing insecticides and fer-
23 tilizers. After B&B renewed its lease in 1969, the ownership of
24 the property was transferred to Frank R. Stockton and Eve Derby
25 Stockton (as joint tenants) in 1971. Thereafter, the Stocktons
26 reconveyed the parcel to B&B in a grant deed on September 28,
27 1976.

1 The other parcel of land within the boundaries of the Site,
2 which extends along the western border and forms the southwestern
3 corner of the Site, is presently owned by Respondents Southern
4 Pacific and Santa Fe. This parcel was part of a larger area of
5 property which was conveyed to the Southern Pacific Company (the
6 predecessor to the Southern Pacific Transportation Company) by
7 Thomas Derby on July 17, 1923. This portion of the Site was ini-
8 tially used by the Southern Pacific Company as a location for a
9 branch line of its railroad. On July 19, 1924, the Southern
10 Pacific Company granted an undivided one-half interest in the
11 rail line running through the property (including the existing
12 tracks, rights of way, and spurs) to Santa Fe.

13 A number of documents which have been recorded between 1924
14 and the present time, including contracts between Southern
15 Pacific and Santa Fe, and contracts and leases executed between
16 Southern Pacific/Santa Fe and other parties, indicate that both
17 Southern Pacific and Santa Fe are owners of the property in ques-
18 tion. The tax records for this portion of the Site similarly in-
19 dicate that the parcel in question is jointly owned by Southern
20 Pacific and Santa Fe, since each firm is assessed a tax on the
21 parcel based on a one-half interest in that property.

22 Finally, in addition to the Respondents' ownership of a por-
23 tion of the Site, as described above, the Respondents leased a
24 portion of their property to B&B in 1975, for the stated purpose
25 of "parking fertilizer rigs."

1 4. Incident/Release Characteristics

2 The Brown & Bryant Site has two media (groundwater and soil)
3 that are presently known to be contaminated. The groundwater in
4 the vicinity of the Site occurs in three water bearing zones.
5 The first water bearing zone, which is referred to as the
6 "perched" zone, is at an approximate depth of 65 to 90 feet below
7 ground surface. Preliminary assessments indicate that this zone
8 is contaminated with some or all of the chemicals which are dis-
9 cussed in section II.B.2. of this Order. The second water bear-
10 ing zone, which lies between 155 and 180 feet below ground sur-
11 face, is referred to as the "regional unconfined aquifer." While
12 this aquifer also appears to be contaminated, further study is
13 necessary to determine the nature and extent of such contamina-
14 tion. Below this second water bearing zone lies an extensive
15 clay layer, which separates the regional unconfined aquifer from
16 the regional confined aquifer. The existence and/or extent of
17 contamination in this lower aquifer has not yet been determined.

18 In addition to the groundwater contamination discussed
19 above, several soil contamination "hot-spots" are located on the
20 Brown & Bryant Site. These areas of relatively high soil con-
21 tamination include the area of the former wastewater disposal
22 pond in the southeast corner of the Site; a dinoseb "hot-spot" at
23 the approximate north-south midpoint of the Site, along the east-
24 ern boundary of the facility; the soil around the two sumps; and
25 the soil around the large tank which was previously used by B&B.
26 The depth of the contamination varies with each location and con-

1 taminant sampled; however, soil contamination has been found to
2 extend to the perched aquifer in several different locations
3 within the Site.

4
5 B. ENDANGERMENT

6 The release or substantial threat of release of hazardous
7 substances, pollutants or contaminants into the environment from
8 the Brown & Bryant Site presents an imminent and substantial
9 threat to public health and welfare, as indicated below.

10 1. Site Assessment Activities

11 As stated above, from 1983 through 1988, Brown & Bryant con-
12 ducted several soil and groundwater investigations at its Arvin
13 reformulation plant under the direction of DHS. The major work
14 performed by B&B included the installation of ten monitoring
15 wells and the removal of some heavily contaminated soil which was
16 located beneath two sumps and beneath a former waste pond on the
17 plant property.

18 In 1990, EPA's Emergency Response Section conducted a subse-
19 quent site assessment. As part of this assessment, the Emergency
20 Response Section drilled and sampled 39 boreholes both on-Site
21 and off-Site, and installed three off-Site shallow monitoring
22 wells.

23 2. Substances of Concern

24 There are thirty-seven (37) organic and inorganic chemicals
25 that have either been detected at the Site during Site investiga-
26 tions, or were sent to the Site in the past, for use in B&B's on-
27 going manufacturing processes. Of these chemicals, the following

1 are of particular concern to EPA, either due to their toxicity,
2 the concentrations found at the Site, or the mobility of the par-
3 ticular constituents:

4 a. Ethylene Dibromide (EDB): EDB is a heavy, colorless liq-
5 uid with a chloroform-like odor, which turns brown on exposure to
6 light. EDB is an anticipated human carcinogen (NTP) and is toxic
7 by inhalation, skin adsorption and ingestion. It is corrosive to
8 the skin and eyes upon contact, and to the respiratory tract
9 through inhalation. Chronic exposure may produce adverse
10 reproductive effects in males.

11 b. Dibromochloropropane (DBCP): DBCP is a dense liquid
12 (which may be colorless, yellow or amber) with a pungent odor at
13 high concentrations. It is an OSHA carcinogen, which is highly
14 toxic by inhalation, toxic by ingestion, and moderately toxic by
15 dermal adsorption. Male workers who are employed in the produc-
16 tion and formulation of DBCP have been found to experience ad-
17 verse reproductive effects.

18 c. 1,2-Dichloropropane (1,2-DCP): 1,2-DCP is a colorless
19 liquid with a chloroform-like odor. It presents a substantial
20 fire hazard when exposed to flame or heat. It is toxic by in-
21 halation, moderately toxic by ingestion, and slightly toxic by
22 dermal adsorption. Repeated or prolonged exposure may cause
23 severe liver or kidney damage.

1 d. 1,3-Dichloropropane (1,3-DCP): 1,3-DCP is a colorless
2 liquid which presents a substantial fire hazard when exposed to
3 flame or heat. Repeated or prolonged exposure may cause severe
4 liver or kidney damage as well as central nervous system depres-
5 sion.

6 e. Trichloropropane (TCP): TCP is a colorless liquid with
7 an unpleasant odor. It presents a moderate fire hazard, and is a
8 significant irritant to eyes, skin and mucous membranes.
9 Repeated or prolonged exposure may cause severe liver or kidney
10 damage or central nervous system depression.

11 f. Di-nitro-sec-butylphenol (Dinoseb): Dinoseb is a
12 yellow-orange solid with a pungent odor. Dinoseb presents a sig-
13 nificant explosive hazard when it is exposed to heat or flame.
14 EPA has determined that an adequate margin of safety does not ex-
15 ist between the use of dinoseb and the potential effects of this
16 chemical in inducing birth defects or producing sterility.
17 Dinoseb is highly toxic by dermal absorption and ingestion. Fol-
18 lowing the absorption of dinoseb, symptoms may occur suddenly,
19 and for up to two days after the cessation of exposure.

20 4. Population at Risk

21 The Arvin-Edison Water District maintains six municipal
22 groundwater wells, which supply the City of Arvin with drinking
23 water, within a 1-mile radius of the Site. The public well that
24 is believed to be at greatest risk of contamination from releases
25 at the Site is located approximately 1760 feet southwest of the
26 Site. While this well is screened into the deep regional con-
27 fined aquifer, it is gravel-packed to near the surface. As a

1 result, there may be a hydraulic connection between the regional
2 unconfined aquifer and this drinking water well. In addition to
3 the drinking water wells, there are several agricultural wells
4 within 1/2 mile of the Site, which provide water for the irriga-
5 tion of crops.

6 Due to the proximity of the Site to a residential area, air
7 transport of contamination from the Site is also a potential con-
8 cern. However, it should be noted that previous air monitoring
9 performed at the Site indicated that airborne contamination was
10 not a concern under the conditions present at that time. Fur-
11 thermore, air monitoring performed during the Emergency Response
12 field work indicated that contamination was only present near the
13 boreholes sampled.

14 Past soil investigations led to the discovery of significant
15 and potentially dangerous surface soil contamination, especially
16 from dinoseb. Human contact with the contaminated soil could
17 result in exposure through accidental ingestion, by inhalation of
18 dust, or by dermal contact.

19 The preliminary health assessment for the Brown & Bryant
20 Site was completed by the Agency for Toxic Substances and Disease
21 Registry in October 1989. That assessment concluded that a
22 potential health concern exists at the Site due to the threat of
23 contamination of water supplies reserved for drinking and domes-
24 tic uses. It also raised health concerns in connection with the
25 potential for human exposure to the contaminated surface soils at
26 the facility. Finally, while the report noted that there was in-
27 sufficient air monitoring data at present to determine if ex-

1 posure to airborne contamination from the Site is a health con-
2 cern, it indicated that such data should continue to be compiled,
3 to enable such an assessment to be made in the future.

4
5 III. CONCLUSIONS OF LAW

6 A. The Respondents are "persons" as defined in Section
7 101(21) of CERCLA, 42 U.S.C. Section 9601(21).

8 B. The Brown & Bryant, Inc. Site, located at 600 South
9 Derby Road, Arvin, California, is a "facility" as defined in Sec-
10 tion 101(9) of CERCLA, 42 U.S.C. Section 9601(9).

11 C. Chemicals and their constituents which are present at
12 the Site, including EDB; DBCP; 1,2-DCP; 1,3-DCP; TCP; and
13 Dinoseb, are "hazardous substances" as defined in Section 101(14)
14 of CERCLA, 42 U.S.C. Section 9601(14).

15 D. The presence of hazardous substances at the Site and the
16 potential for those substances to migrate constitutes a "release"
17 or "threatened release" of hazardous substances into the environ-
18 ment as defined in Section 101(22) of CERCLA, 42 U.S.C. Section
19 9601(22).

20 E. The Respondents are "responsible parties" as defined in
21 Section 107(a) of CERCLA, 42 U.S.C. Section 9607(a).

22
23 IV. DETERMINATIONS

24 Based on the Findings of Fact and Conclusions of Law, the
25 Director, Hazardous Waste Management Division, EPA Region IX, has
26 made the following determinations:

1 A. The release or threatened release of hazardous sub-
2 stances, pollutants or contaminants from the Site may present an
3 imminent and substantial endangerment to the public health, wel-
4 fare, or the environment.

5 B. In order to prevent or mitigate immediate and sig-
6 nificant risk of harm to human health and the environment, it is
7 necessary that actions be taken immediately to contain and
8 prevent the release and potential release of hazardous sub-
9 stances, pollutants, or contaminants from the Site.

10 C. The removal measures required by this Order are consis-
11 tent with the National Contingency Plan ("NCP"), 40 C.F.R. Part
12 300.

13
14 V. WORK TO BE PERFORMED

15 Based on the Findings of Fact, Conclusions of Law and Deter-
16 minations, EPA Hereby Orders the Respondents to implement the
17 following measures under the direction of EPA's On-Scene Coor-
18 dinator:

19 A. Within forty-eight (48) hours of receipt of this Order, the
20 Respondents shall orally notify EPA of their intention to comply
21 with all the terms set forth in the Order.

22 B. Within twenty-one (21) calendar days of the effective date
23 of this Order, the Respondents shall submit to EPA a work
24 schedule describing the manner and time frame in which the
25 response activities to be conducted pursuant to this Order will
26 be performed at and nearby the Brown & Bryant facility. The
27 response activities required by this Order shall be conducted in

1 a safe and responsible manner, and in accordance with all ap-
2 plicable federal, state and local laws, including, but not
3 limited to, the NCP, 40 C.F.R. Part 300; the Resource Conserva-
4 tion and Recovery Act, 42 U.S.C. Section 6901, et seq., and its
5 implementing regulations; and applicable Occupational Safety and
6 Health and Administration regulations, as set forth in Title 29
7 of the Code of Federal Regulations. At a minimum, the proposal
8 to be submitted by the Respondents shall include:

- 9
- 10 (a) A site safety plan to protect on-Site workers and the
11 surrounding community during the performance of the response
12 activities in question; and
- 13 (b) A work schedule for the implementation of the follow-
14 ing response activities:
- 15 - Installation and development of sixteen monitoring/
16 extraction wells at and nearby the B&B facility. Attached
17 as Exhibit A is a copy of the well installation and con-
18 struction specifications which EPA has proposed in connec-
19 tion with the planned response;
- 20 - Survey of the locations and elevations of the proposed
21 monitoring/extraction wells;
- 22 - Installation of a six inch continuous asphalt or concrete
23 berm around the facility sufficient to control run-on and
24 run-off from rainwater. The berm shall be constructed in a
25 manner which will permit trucks and other vehicles and
26 equipment to gain access to the facility at the two existing
27 entrances to the Site;
- 28 - Repair of the fence around the perimeter of the facility,
29 and maintenance of the fence and the locked gates at the
30 Site for the period in which the Respondents will be per-
31 forming work pursuant to this Order;
- 32 - Maintain Site security, and security at off-Site locations
33 where wells are to be installed, and restrict the access of
34 unauthorized persons to such locations during the period in
35 which the Respondents will be performing work at and nearby
36 the Site pursuant to this Order. In addition, the Respon-
37 dents shall post warning signs in English and Spanish, stat-
ing: "Danger: Hazardous Substances - Unauthorized Persons
Keep Out" at the Site.

1 - Proper management of drill cuttings, drilling fluids, and
2 well development water obtained during the well installation
3 and development process. If such materials are determined
4 to be hazardous wastes, they shall be manifested to a per-
5 mitted treatment, storage, or disposal facility, in accor-
6 dance with the requirements of the Resource Conservation and
7 Recovery Act of 1976, 42 U.S.C. Section 6921, et seq., as
8 discussed in section VI. of this Order.

9 C. It is the responsibility of the Respondents to obtain access
10 to and use of any off-Site areas, where such access may be
11 necessary to enable the Respondents to carry out the terms
12 of this Order. Furthermore, the Respondents shall provide
13 access to such off-Site areas and to the facility itself to
14 all EPA employees, contractors, and other representatives at
15 all reasonable times, and will permit such persons to be
16 present in all areas where work is being conducted pursuant
17 to this Order.

18 D. Within seven (7) days following EPA approval of the Respon-
19 dents' proposal, the Respondents shall begin implementation
20 of that proposal. The Respondents shall fully implement the
21 proposal as approved by EPA, and shall conduct the work out-
22 lined in the proposal within the time periods set forth in
23 the schedule approved by EPA.

24 E. Upon completion of the response activities to be conducted
25 pursuant to this Order, the Respondents shall submit a
26 report to EPA which documents the response activities which
27 they have performed, including such items as well logs, well
28 construction diagrams, geophysical well logs, lithologic

1 logs, site maps, and documentation of well development pro-
2 cedures and the disposition of drill cuttings, drilling
3 fluids, and development water.

4
5 VI. COMPLIANCE WITH OTHER LAWS

6 The Respondents shall comply with all applicable federal,
7 state and local laws and regulations in carrying out the terms of
8 this Order. All hazardous substances removed from the facility
9 shall be handled in accordance with the Resource Conservation and
10 Recovery Act of 1976, 42 U.S.C. Section 6921, et seq., the
11 regulations promulgated under that Act, and Section 121(d)(3) of
12 CERCLA, 42 U.S.C. Section 9621(d)(3).

13
14 VII. ON-SCENE COORDINATOR

15 EPA has appointed an On-Scene Coordinator ("OSC") for the
16 Site who has the authority vested in the On-Scene Coordinator by
17 40 C.F.R. Part 300, et seq. The On-Scene Coordinator for the
18 Brown & Bryant Site for the purposes of this Order is:

19 Robert M. Mandel
20 Federal On-Scene Coordinator
21 Field Operations Branch
22 United States Environmental Protection Agency, Region IX
23 Mail Code H-8-3
24 75 Hawthorne Street
25 San Francisco, California 94105
26 (415) 744-2290

27 VIII. SUBMITTALS

28 All submittals and notifications to EPA required by this Or-
29 der or any approved proposal under this Order concerning the
30 Brown & Bryant Site shall be made to:

1 Jerry Clifford
2 Deputy Director, Superfund
3 Hazardous Waste Management Division
4 United States Environmental Protection Agency, Region IX
5 Mail Code H-1-S
6 75 Hawthorne Street
7 San Francisco, California 94105

8
9 Copies of all submittals and notifications shall be sent to
10 the On-Scene Coordinator and the Remedial Project Manager for the
11 Site.

12 All approvals and decisions made by EPA regarding the sub-
13 mittals and modifications which the Respondents provide to EPA
14 shall be communicated to the Respondents by the Deputy Director,
15 Superfund or his designee. No informal advice, guidance, sug-
16 gestions, or comments by EPA regarding any reports, plans,
17 specifications, schedules, or other matters relating to this Or-
18 der or the B&B Facility will relieve the Respondents of their
19 obligation to obtain formal approvals as required by this Order.

20 IX. ACCESS

21 As indicated in section V.C. above, the Respondents shall
22 provide EPA employees, contractors, and other representatives
23 with unrestricted access to the facility at all reasonable times.
24 Nothing in this Order shall limit any access rights that EPA or
25 other agencies may have pursuant to law.
26
27

1 X. ENDANGERMENT DURING IMPLEMENTATION

2 The OSC may determine that acts or circumstances (whether
3 related to or unrelated to this Order) may endanger human health,
4 welfare, or the environment, and as a result of this determina-
5 tion, may order the Respondents to stop further implementation of
6 this Order until the endangerment is abated.

7
8 XI. GOVERNMENT NOT LIABLE

9 The United States Government and its employees and other
10 representatives shall not be liable for any injuries or damages
11 to persons or property resulting from the acts or omissions of
12 the Respondents, their employees, contractors, or other represen-
13 tatives caused by carrying out this Order. For the purposes of
14 this Order, the United States Government is not a party to any
15 contract with the Respondents.

16
17 XII. NONCOMPLIANCE

18 A. A willful violation or failure or refusal to comply with
19 this Order may subject the Respondents to a civil penalty of up
20 to \$25,000 per day in which the violation occurs or failure to
21 comply continues, pursuant to the provisions of Section 106(b)(1)
22 of CERCLA, 42 U.S.C. Section 9606(b)(1). Failure to comply with
23 this Order without sufficient cause may also subject the Respon-
24 dents to punitive damages of up to three times the total costs
25 incurred by the United States for Site response, pursuant to Sec-
26 tion 107(c)(3) of CERCLA, 42 U.S.C. Section 9607(c)(3).

1 B. EPA may take over the response action at any time if EPA
2 determines that the Respondents are not taking appropriate ac-
3 tion. EPA may order additional actions it deems necessary to
4 protect public health, welfare, or the environment.

5
6 XIII. OPPORTUNITY TO CONFER

7 The Respondents may request a conference with the Deputy
8 Director, Superfund, EPA Region IX, or his staff to discuss the
9 provisions of this Order. At any conference held pursuant to the
10 Respondents' request, the Respondents may appear in person or by
11 counsel or other representatives for the purpose of presenting
12 any objections, defenses or contentions which the Respondents may
13 have regarding this Order. If the Respondents desire such a con-
14 ference, the Respondents must make a request orally to Robert M.
15 Mandel, Federal On-Scene Coordinator, at (415) 744-2290, within
16 48 hours of receipt of this Order, and must confirm the request
17 in writing immediately. A conference does not alter the effec-
18 tive date of this Order.

19
20 XIV. PARTIES BOUND

21 This Order shall apply to and is binding upon the Respon-
22 dents, their officers, directors, agents, employees, contractors,
23 successors, and assigns.

1 XV. NOTICE OF INTENT TO COMPLY

2 As stated in paragraph V.A. above, Respondents Southern
3 Pacific Transportation Company and the Atchison, Topeka & Santa
4 Fe Railway shall orally inform the On-Scene Coordinator of their
5 intention to comply with all of the terms set forth in this Order
6 within forty-eight (48) hours of receipt of the Order. The oral
7 notice provided by the Respondents shall be confirmed within two
8 (2) days by written notice to the Deputy Director, Superfund, EPA
9 Region IX. Failure to punctually notify EPA of the Respondents'
10 intention to fully comply with this Order will be construed by
11 EPA as a refusal to comply.

12
13 XVI. NOTICE TO STATE

14 Notice of the issuance of this Order has been given to the
15 Department of Health Services, State of California. EPA will
16 consult with the California Department of Health Services and
17 other applicable California and Kern County agencies, as ap-
18 propriate.

19
20 XVII. RECORD RETENTION

21 Copies of all records and files relating to hazardous sub-
22 stances found on the Site shall be retained for six years follow-
23 ing completion of the activities required by this Order and shall
24 be made available to the EPA prior to the termination of the
25 removal activities under this Order.

1 XVIII. ADDITIONAL WORK

2 Nothing contained herein shall be construed to prevent EPA
3 from seeking legal or equitable relief to enforce the terms of
4 this Order, or from taking any legal or equitable action as it
5 deems appropriate and necessary, or from requiring the Respon-
6 dents in the future to perform additional activities pursuant to
7 CERCLA, 42 U.S.C. Section 9601, et seq., or any other applicable
8 law.

9

10 XIX. EFFECTIVE DATE

11 Notwithstanding any conferences requested pursuant to the
12 provisions of this Order, this Order is effective upon receipt by
13 the Respondents, and all times for performance shall be calcu-
14 lated from that date.

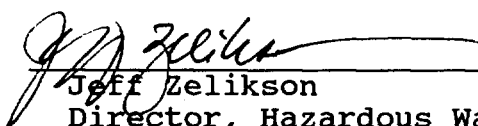
15 IT IS SO ORDERED on this 31 day of January, 1991.

16 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

17

18

19 by:



20 Jeff Zelikson
Director, Hazardous Waste Management Division
EPA Region IX

21

22 Contacts:

23

24

25

26

27

Robert M. Mandel
Federal On-Scene Coordinator
Field Operations Branch
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75 Hawthorne Street
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1 Cynthia Wetmore
2 Remedial Project Manager
3 Northern California Section
4 Remedial Action Branch
5 United States Environmental Protection Agency, Region IX
6 Mail Code H-6-2
7 75 Hawthorne Street
8 San Francisco, California 94105
9 (415) 744-2218

6 Linda P. Wandres
7 Office of Regional Counsel
8 United States Environmental Protection Agency, Region IX
9 Mail Code RC-3
10 75 Hawthorne Street
11 San Francisco, California 94105
12 (415) 744-1359

Exhibit A

Number of wells:	sixteen
Number of Perched Wells:	ten
Number of 6-inch Unconfined Wells:	three
Number of 4-inch Unconfined Wells:	three

Perched Wells:

Diameter:	four-inches
Material:	stainless steel grade 304
Conductor casing:	no
Screen Interval:	ten-feet
Depth of Well:	90 feet maximum, 75 feet minimum (to be determined in the field)
Screen Size:	0.0200 inches
Gravel Pack:	Monterey #3 or equivalent
Method of Installation:	Auger or Mud-Rotary

4-inch Unconfined Wells:

Diameter:	four-inches
Material:	stainless steel grade 304
Conductor casing:	yes; 10-inch to approx. 140 feet
Screen Interval:	thirty-feet
Depth of Well:	approx. 200 feet (to be determined in the field)
Screen Size:	0.0200 inches
Gravel Pack:	Monterey #3 or equivalent
Method of Installation:	Mud-Rotary

6-inch Unconfined Wells:

Diameter:	six-inches
Material:	stainless steel grade 304
Conductor casing:	yes; 10-inch to approx. 140 feet
Screen Interval:	thirty-feet
Depth of Well:	approx. 200 feet (to be determined in the field)
Screen Size:	0.0200 inches
Gravel Pack:	Monterey #3 or equivalent
Method of Installation:	Mud-Rotary

Well schematics of each type of well are shown on Figure A, B, & C.

Approximate location of the wells is shown on Figure D. Not included on the Figure is three unconfined (6-inch) and three perched wells that will be located between the Site and the City well #1. All final locations will be approved by EPA's OSC.

All unconfined wells should be continuously cored and electric logs be performed.

Each on-site well will be completed as shown on Figure E. A cement pad 3 feet by 3 feet by 4 inches shall encircle the casing at the surface. A surveyors pin shall be installed in each cement pad. A lockable steel protective cap will cover the casing and will rise 2 feet above the ground surface and extend three feet beneath the surface. A removable slip cap or lid will be placed on top of the casing. All wells to be constructed on off-facility property will be completed following the direction of the property owners (i.e. flush with ground, raised, suitable for traffic). Final approval for well completion will be made by EPA's OSC. All wells will be locked and keys will be furnished to EPA.

All wells will be developed using techniques approved by EPA's OSC.

All wells will be surveyed using State Planar Coordinates for easting and northing, also for elevation. A "V" notch should be cut into each casing stick-up and surveyed for elevation.

Dedicated submersible pumps shall be installed in the unconfined wells.

Drilling spoils, produced pumping waters and decontaminated residues will be properly handled, packaged and transported by the Respondents.

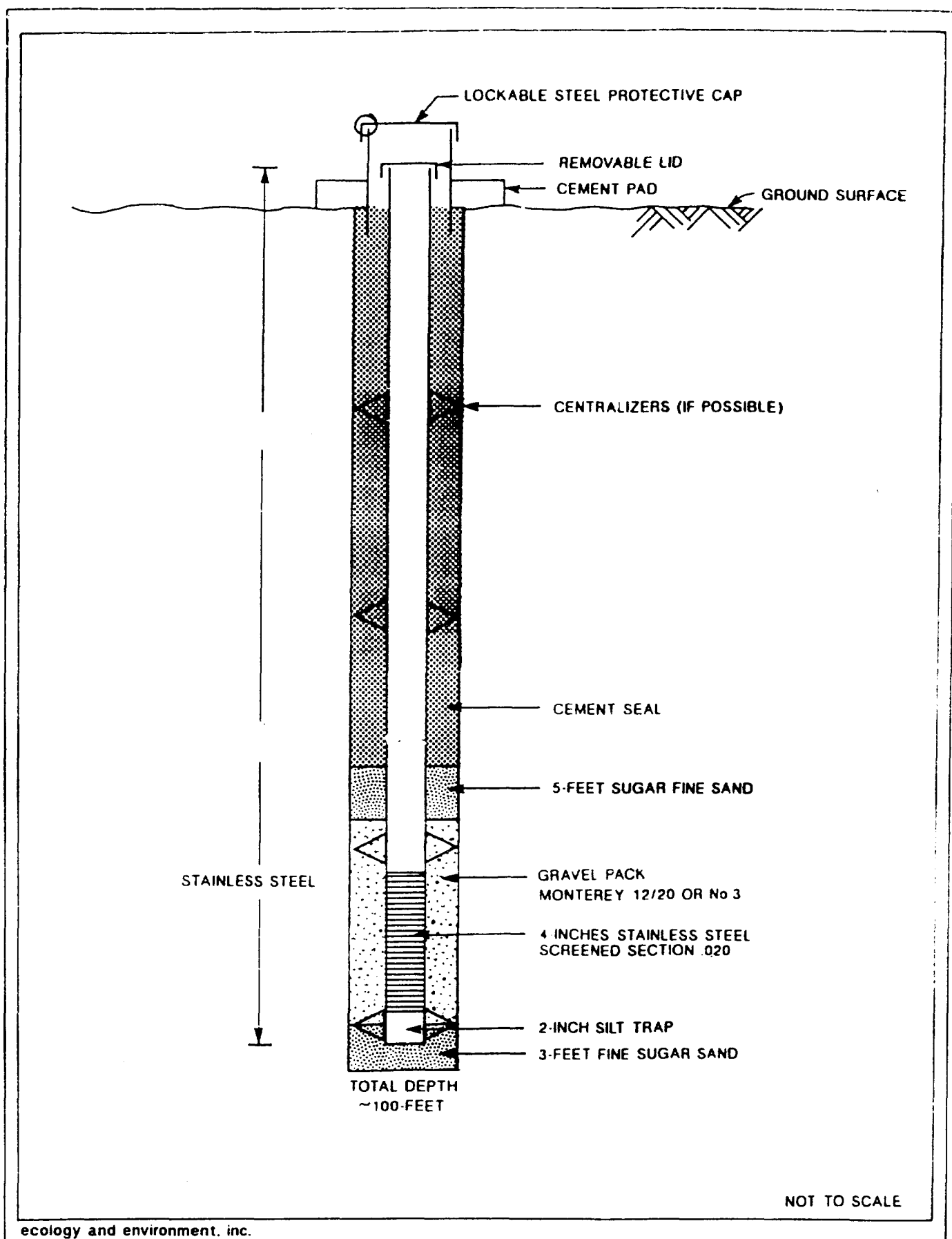


Figure A SCHEMATIC OF PERCHED WELLS

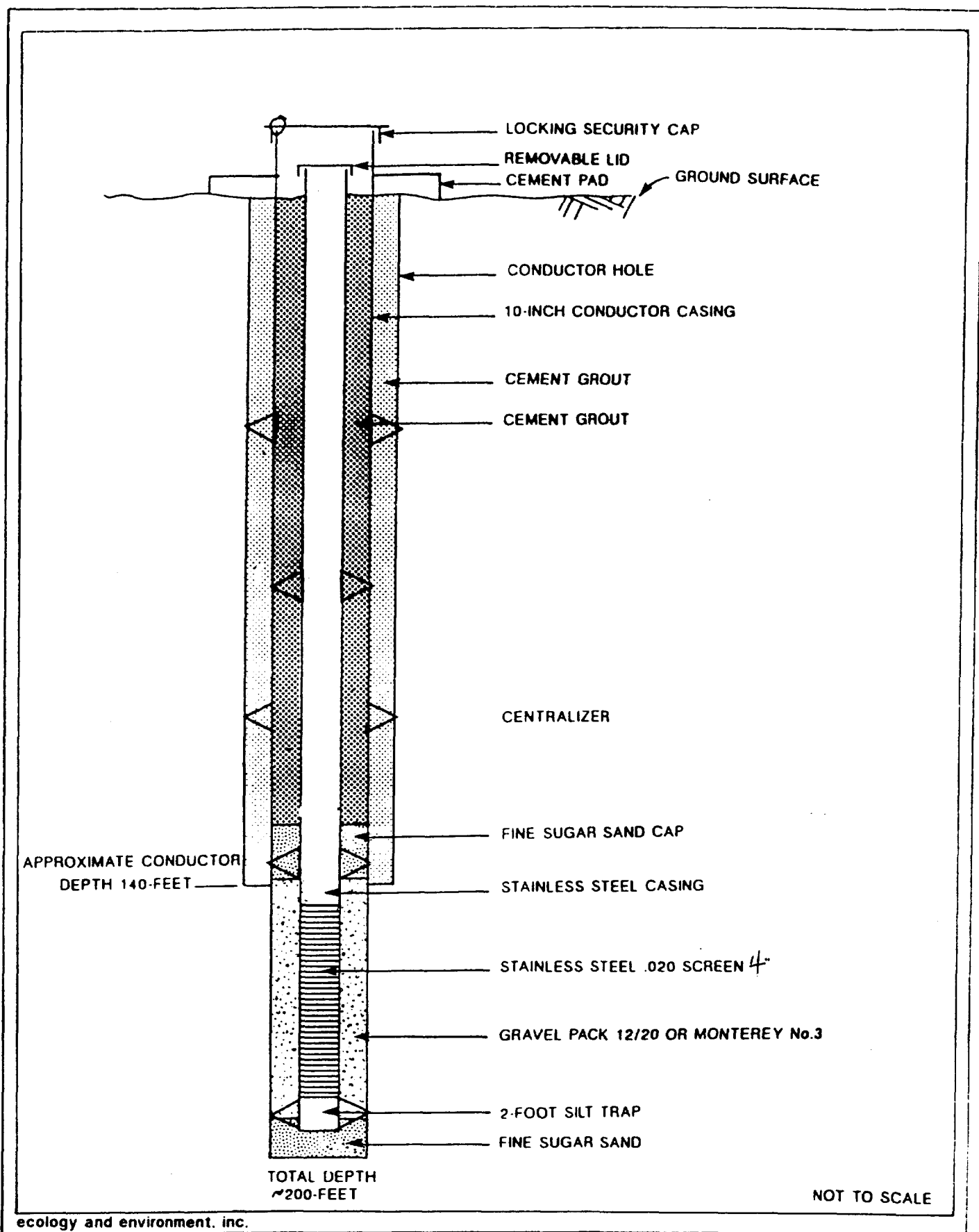
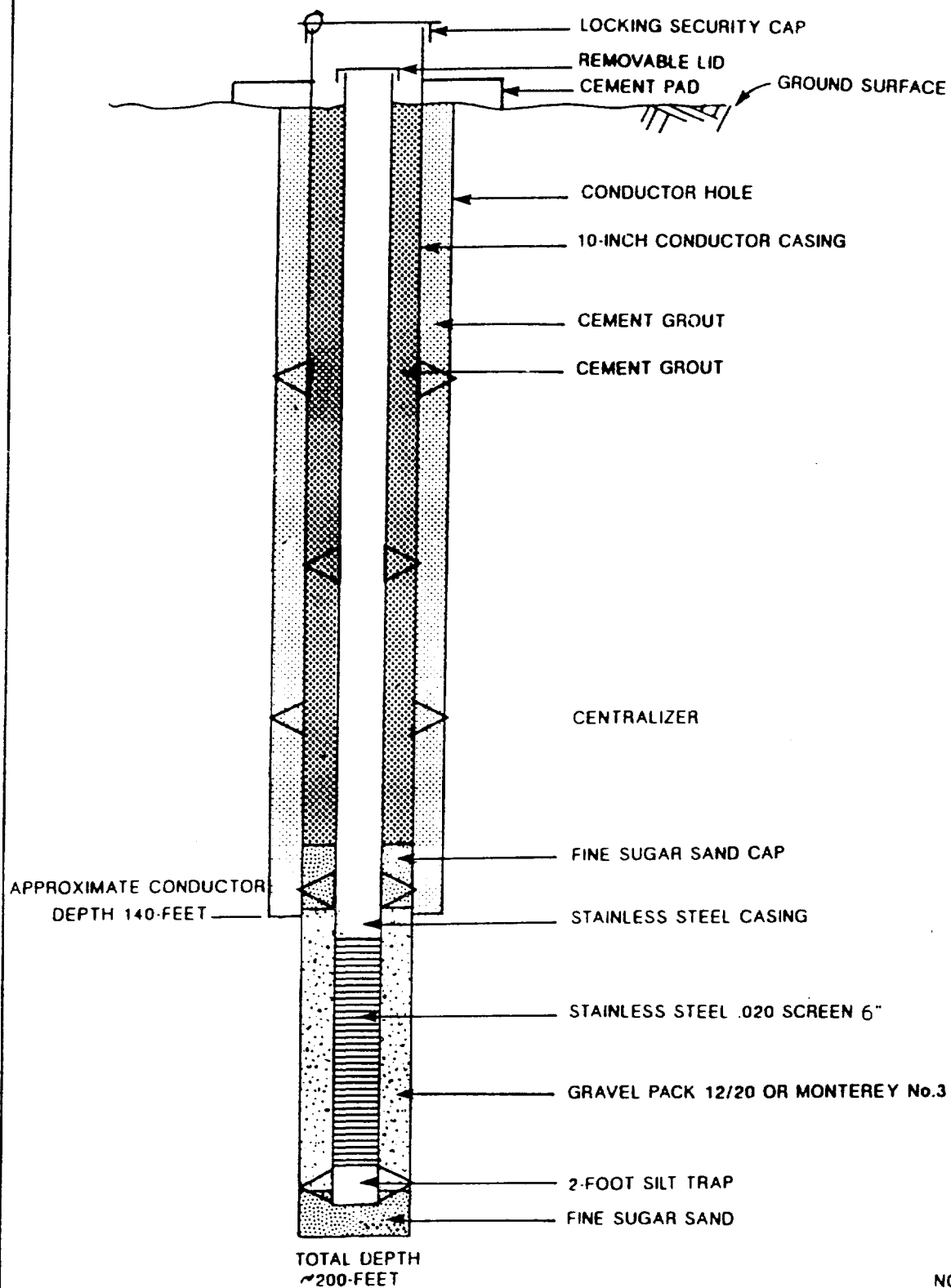
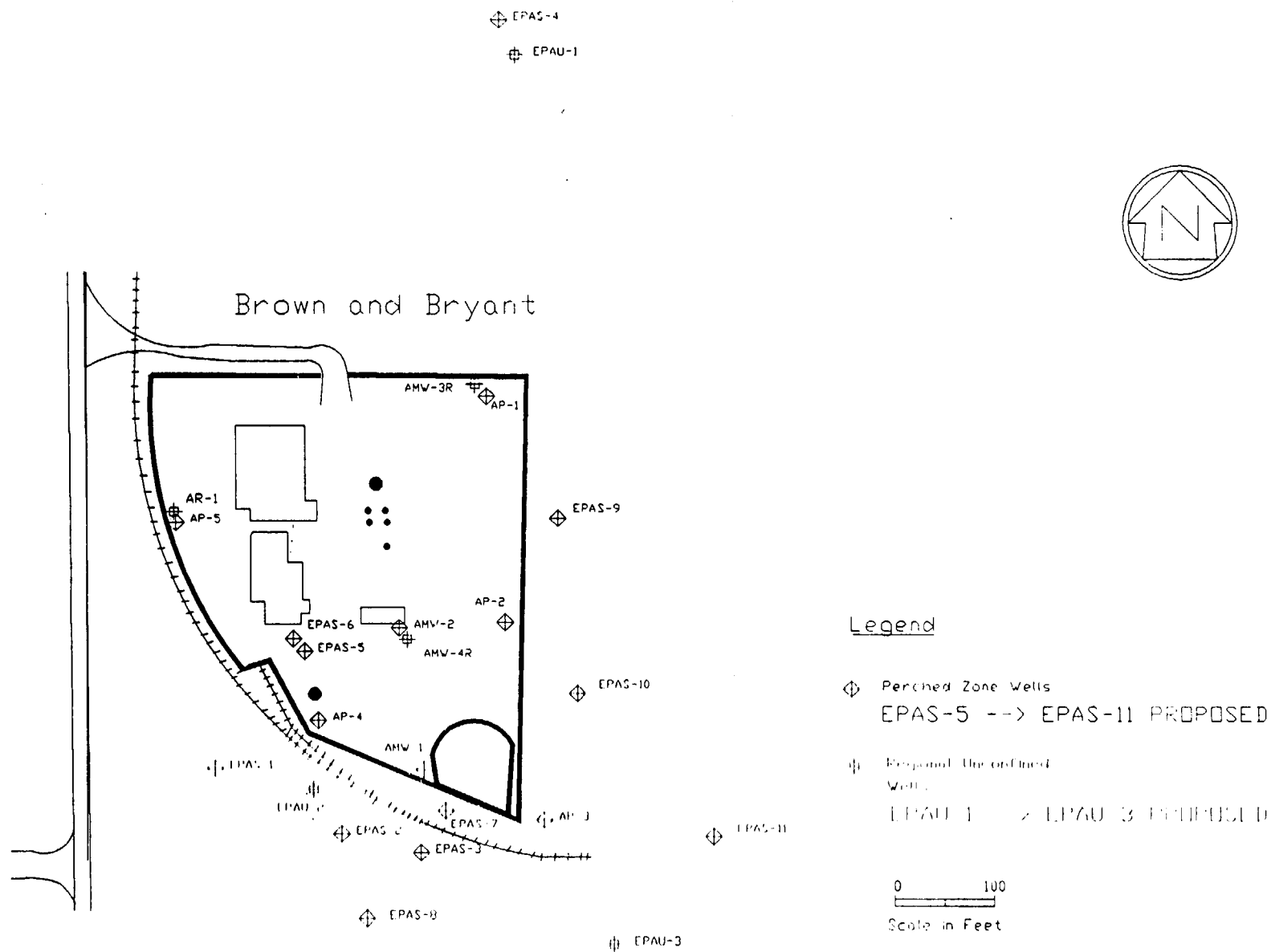


Figure B 4" DEEP WELL SCHEMATIC



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Figure C 6" DEEP WELL SCHEMATIC



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Arvin, California

Proposed Well Locations

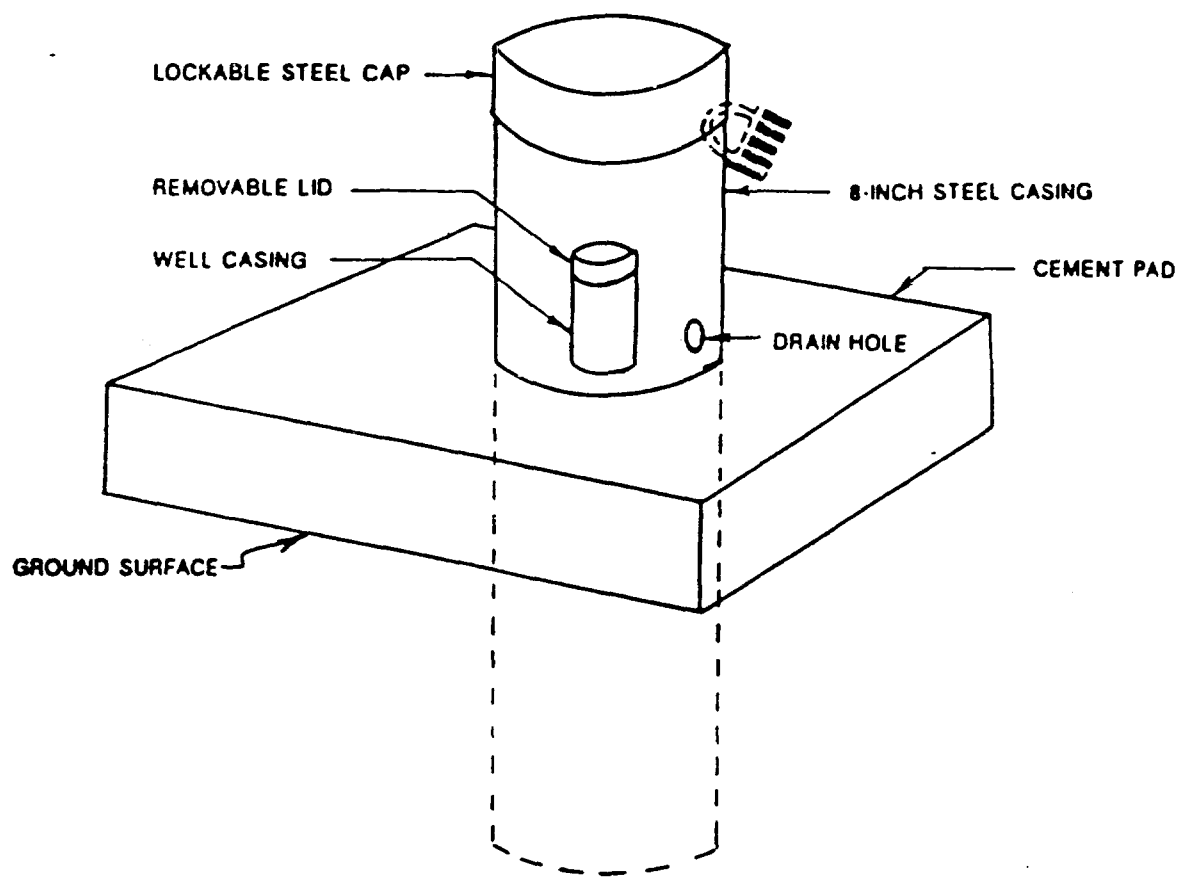
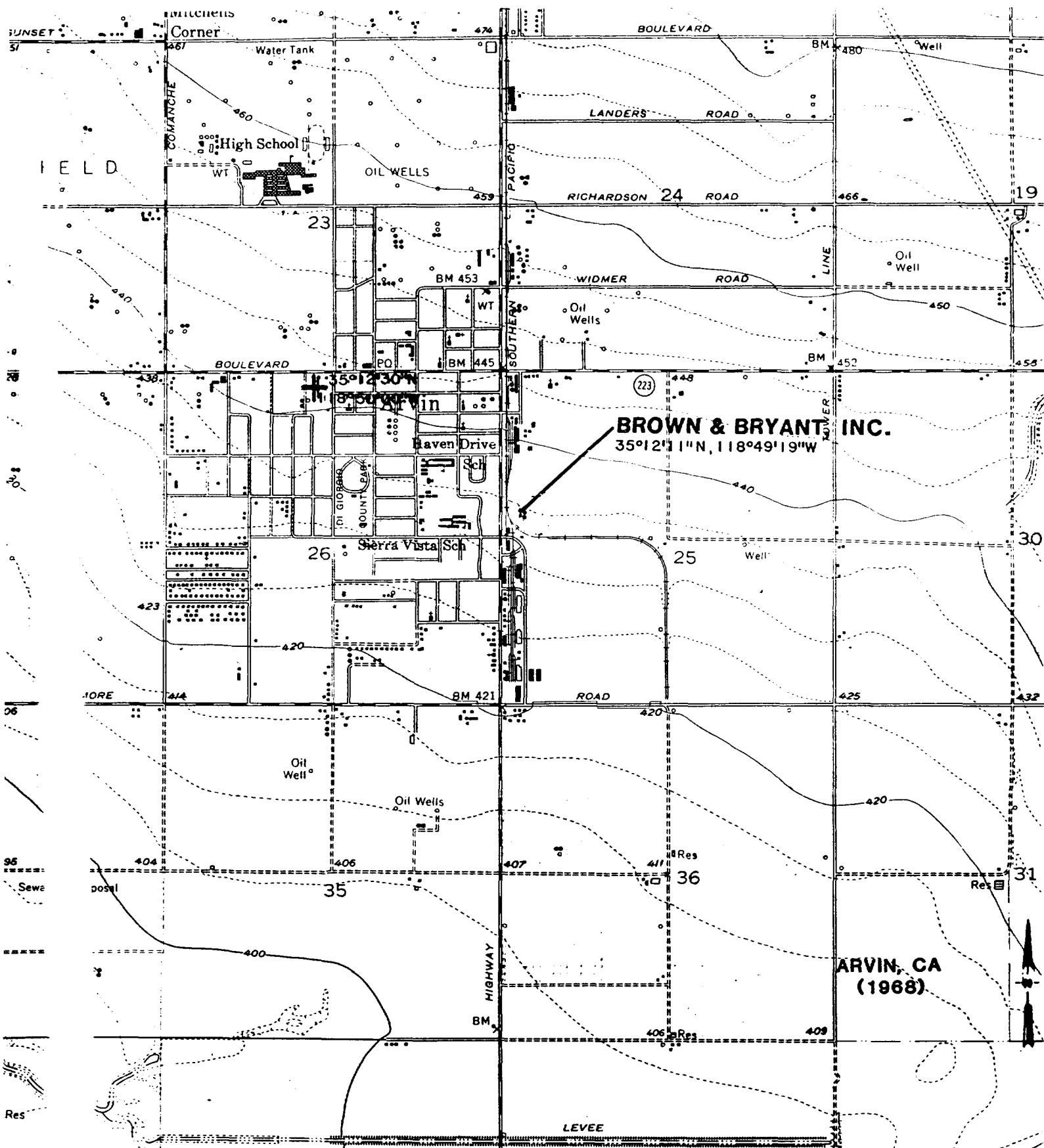


FIGURE E
WELL SECURITY



Local site location map, Arvin, California. Scale 1:24,000.